



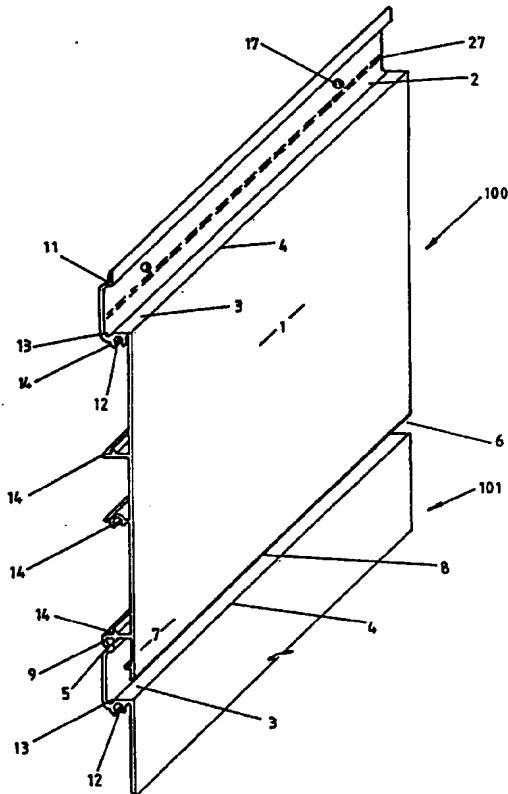
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(54) Title: INTERENGAGING PLANK WALL FORMS CHANNELS FOR SHELVING OR THE LIKE

(57) Abstract

The present invention discloses an extrusion (100) capable, if desired, of being interengaged as planking on to a surface with like extrusions (101). The extrusion comprises a first front wall segment (1), a first rear wall segment (2). The front wall segment and rear wall segment are joined by a first intermediate segment (3) which may be adjacent a first longitudinal edge (4) of the front wall section or segment. A second rear wall segment (9) is provided, said rear wall segment being connected to said front wall segment (1) by means of a second intermediate section (5). The connection between said second intermediate section and said front wall segment being offset from the second longitudinal edge (8). When connected with adjacent extrusions, a channel (6) is formed or defined by said front wall segment (1), said rear wall segment (2), said first intermediate segment (3), said second intermediate section (5) and that portion (5) of the front wall segment (1) which lies between said second longitudinal edge (8) and said connection between said front wall segment (1) and said second intermediate section (5). The lower portion of the retaining lip (7) of the front wall segment substantially constricts the mouth of said channel (6). The channel may be used to support a bracket (13). The bracket may support a shelf or be itself a shelf.



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INTERENGAGING PLANK WALL FORMS CHANNELS FOR SHELVING OR THE LIKE**FIELD OF THE INVENTION**

This invention relates to apparatus for walls, partitions and fixtures and, in particular but not exclusively, an extrusion or series of extrusions to form internal partition walls which may also provide connection points for the fixing of shelf brackets for display and storage and the like and/or as a decorative wall.

BACKGROUND OF THE INVENTION

Existing partition walls for offices sometimes incorporate grooves or other fixing apparatus for the attachment of shelf brackets to the partition wall. These walls will have a series of such fixing points to allow for the provision of shelf brackets at a variety of different heights or positions on the wall and easy shifting from one position to another. In the past, such wall systems have incorporated grooves into particle board and medium density fibreboard for the attachment of the shelf brackets.

This invention seeks to provide an extrusion which may be fixed to a wall or form a wall as a stand alone unit and provide a series of channels for the fixing of the shelving brackets as well as providing a neat and tidy appearance. It is an object of the invention to overcome at least some of the disadvantages of the prior art or at least provide the public with a useful choice.

20 BRIEF SUMMARY OF THE INVENTION

Accordingly, in a first aspect the present invention may broadly be said to consist in an extrusion capable if desired of being interengaged as planking onto a surface with like extrusions, said extrusion comprising:

a front wall segment;

a first rear wall segment separate from said front wall segment and extending, at least in part, beyond a first longitudinal edge of said front wall segment;

a first intermediate segment connected to said front wall segment and further connected to said first rear wall segment;

a second rear wall segment separate from said front wall segment (not necessarily in the same plane as said first rear wall segment);

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- a second intermediate segment connected to said front wall segment and further connected to said second rear wall segment said connection between said second intermediate section and said front wall segment being offset from a second longitudinal edge of said front wall segment;
- 5 the extrusion being arranged and constructed so that said first rear wall segment of the extrusion, said first intermediate segment of the same extrusion and said second rear wall segment of an adjacent-like extrusion, said second intermediate segment of said adjacent-like extrusion and that portion of said front wall segment of said adjacent-like extrusion extending from said second longitudinal edge to its connection
- 10 with its second intermediate segment of an adjacent extrusion defining a channel having a channel mouth constricted in part by said second longitudinal edge of said front wall segment of said adjacent-like extrusion segment.
- Preferably the plane of said intermediate segments is substantially perpendicular to the principal planes of the front wall segments and rear wall segments.
- 15 Preferably engagement means are provided at or adjacent a longitudinal edge of said first rear wall segment distal from said intermediate segment; said means constructed to engage a part of said second rear wall segment on an adjacent-like extrusion.
- Preferably said rear wall includes attachment means for attachment of rear wall
- 20 to a supporting wall.
- Preferably said intermediate segment and rear facing webs may include a screw tube along the length of said extrusion to assist in the engagement of said extrusions with adjacent extrusions and/or for the attachment of end caps or posts.
- Preferably concealed ribbing within said defined channel is used to support
- 25 wiring.
- Preferably a concealed groove at the rear of said intermediate segment within the defined channel retain coloured inserts and/or signs or other attachments.
- Preferably rear facing ribs on said intermediate segments and channel defining segments have webs to retain fillets to butt extrusions together to ensure flush joins
- 30 and/or to support said extrusion.

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In another aspect the present invention may broadly be said to consist in as a combination:

an extrusion as hereinbefore described; and

a bracket comprising:

5 a load bearing portion; and

an engagement portion, in use said engagement portion bearing against said portion of said front wall segment between said longitudinal edge and said first intermediate segment.

Preferably said load bearing portion is a shelf support.

10 Alternatively said load bearing portion is a shelf.

In yet another aspect the present invention consists in a platform wall formed from two or more extrusions as hereinbefore described.

In yet another aspect the present invention consists in as a combination:

a partition wall as hereinbefore described; and

15 an end cap member, in use, said end cap member being associated with the end of said partition wall.

In yet another aspect the present invention may broadly be said to consist in as a combination:

a partition wall as hereinbefore described; and

20 a bracket comprising:

a load bearing portion; and

an engagement portion, in use, said engagement portion bearing against an inner, with respect to said defined channel, portion of said rear wall segment.

Preferably said load bearing portion is a shelf support.

25 Alternatively said load bearing portion is a shelf.

The invention consists in the foregoing and also envisages constructions of which the following gives examples.

BRIEF DESCRIPTION OF THE DRAWINGS

Preferred forms of the present invention will now be described with reference to

30 the following drawings in which:

Figure 1 is a perspective view of an extrusion in accordance with the invention;
Figure 2 is a perspective view of an end post for use with the invention;
Figure 3 is a perspective view of a corner cap for use with the invention;
Figure 4 is a perspective view of a second embodiment of the invention;
5 Figure 5 is a side elevation of the embodiment of Figure 4 attached to a wall; and
Figure 6 is a perspective view of a preferred embodiment of the present invention
in which the extrusions are supported by horizontal fillets.

Referring to the figures, the invention comprises an extrusion 100 which includes a front wall section or segment 1 and a first rear wall section or segment 2. The front 10 wall section or segment 1 and first rear wall section or segment 2 are joined by a first intermediate section or segment 3 which may be at or adjacent a first longitudinal edge 4 of said front wall section or segment 1.

As shown in the figures, a second rear wall segment 9 is provided, said second rear wall segment 9 being connected to said front wall section or segment 1 by means 15 of a second intermediate section or segment 5. Said connection between said second intermediate section or segment 5 in said front wall segment 1 being offset from a said second longitudinal edge 8.

When connected with an adjacent like extrusion 101 a channel 6 formed or defined by said first rear wall segment 1, said second rear wall segment 2, said first 20 intermediate section or segment (hereafter segment) 3, said second intermediate segment 5 and that portion 7 of said front wall segment 1 which lies between said second longitudinal edge 8 and said connection between said front wall segment 1 and said second intermediate segment 5. The lower portion of the retaining lip 7 of said front wall segment 1 ie. that portion adjacent said second longitudinal edge 8 25 substantially constrict the mouth of said channel 6.

The front wall section 1 may also include a retaining lip 7 adjacent a second longitudinal edge 8 which may project from said channel defining part 5 and which is parallel to said rear wall segment 2 to partially close the mouth of the channel 6.

The first rear wall segment 2 and/or second wall segment 2 may be with or 30 without barbs or engagement means 9 at or adjacent the edge thereof. The engagement

means 9 may, in use, engage a part of the first rear wall segment 2 of an adjacent extrusion eg. 101. As shown in Figure 1, the engagement means 9 may engage an open or closed groove 11 of an adjacent extrusion 101.

In preferred forms of the invention the longitudinal edge 8 overlies the channel defining segment 5 and the retaining lip 7 to substantially hide the detail of the channel defining segment from view (from the front of said extrusion) and may produce a smooth save the opening to the longitudinal channel 6 finish.

The extrusion may also include a screw tube 12. This screw tube may be filled, in use, with screws or a dowel (not shown) or other attachment means. A dowel placed in the screw tube 12 will help support the rear surface of the engagement means 9 to keep adjacent extrusions eg. 100, 101 fitted or butted together with end faces flush and can also be used to project the attachment means (not shown) out from the end of the extrusion 100, 101 so that posts or corner posts such as shown in Figures 2 and 3 respectively may be fitted to the end of the extrusion 100, 101.

Supporting ribs 14 may also be used to retain fillets when extrusions 100, 101 are joined end to end further assisting engagement means 9 and screw ways 12 to prevent bowing between butt joins and/or otherwise providing support or rigidity for said extrusions.

Referring now to Figure 5, the bracket may comprise a shelf or a shelf support or support means or other attachments which are well known in the art to which the invention relates, bracket 13 may be engaged in the channel 6 to rest against the first intermediate segment 3 and the retaining lip 7 adjacent said second longitudinal edge 8 and be cantilevered thereby.

Figure 6 shows a structural channel with loose horizontal metal or wooden fillets 105 which slide into rear of the extrusion or plank wall 100 and which engage the supporting ribs 14. This provides an alternative method of assembling adjacent-like extrusions 100, 101, to support post 107, by for example fastening means 106, eg. screws, and is useful for freestanding displays providing ease of assembly and disassembly. By tightening the horizontal fillets 105, the adjacent-like extrusions 100, 101 are firmly gripped without need to drill through the attachment means 17.

At the rear of the intermediate or segment 3 of the channel 6 is preferably a retaining groove 13. This may retain strips which are coloured or otherwise have indica thereon fitted from the front open side of the channel 6 and/or may serve to retain other specialist fittings such as signs which may clip over the longitudinal edge 5 4 and may hang down the visible front wall section 1. Such signs and secondary panels may be further engaged by clipping at their lower edge with the second longitudinal edges.

Also shown in Figure 5, the extrusion 102 may provide more than a single channel 6 between the top of the extrusion 108 and the lower longitudinal edge 8. In 10 Figure 4 and 5, a second channel 16 is incorporated.

Ribbings 27 along the rear wall segment 2, are preferably concealed within the formed channel 6 or 16 by the retaining lip 7 and/or second longitudinal edge 8. These ribbings may retain or grip grommets to conceal wiring within the formed channel 6.

The extrusion 100, 101, 102 may also include attachment means such as screw holes 17 for the placement of screws 18 or other similar fasteners so that the extrusion may be secured against a conventional wallboard or posts 107. Attachment means may also include any other conventional attachment means known to persons skilled in the art to which the invention relates including screws, nails, adhesive, etc.

In use, the extrusion 1 or planking 100, 101, 102 etc. may be attached against an 20 existing wallboard as shown in Figure 5. To continue the extrusion 100, 101, 102 around an external corner, the corner post 19 as shown in Figure 3 may be utilised. In other forms of the invention the corner post may be an additional, clip together, two piece corner. Vertical grooves 20 may be provided on the corner post to accommodate the head of a screw, rivet or other dowel which may be inserted into the end of the 25 screw tube 12 in the extrusion and provide a neat finish to the extrusion or planking 100, 101, 102 about the external corner.

In an alternative construction, the extrusions 100, 101, 102 may be placed back to back to form an internal partition wall. In such cases, the rear walls 2 are placed against each other and fixed together through the attachment means 17 or by any other 30 convenient method including adhesives and adhesive tape.

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At the end of such an above mentioned internal partition wall, the exposed edges 23 of the back to back extrusions may be finished off with an end post 24 as shown in Figure 2. As with the corner post shown in Figure 3a, longitudinal grooves or channels 26 can be provided to accommodate the head of a rivet or the like projecting 5 from the screw holes 12 of the extrusions to hold the extrusions in place and provide a tidy finish.

Preferred forms of the invention are formed by the extrusion of suitable metal, for example, aluminium. Other forms of the invention may be produced from suitable plastics material or, at least in part, from material such as wood whether natural or 10 treated or reconstituted (eg. chipboard). Forms of the invention produced from metal may have a suitable decorative finish, for example, powder coating thereon.

Thus it can be seen that the extrusion provides a wall planking providing attachment points for shelf brackets or the like that is easy to assemble into either a planking over an existing wallboard or into free standing partitions.

CLAIMS:

1. An extrusion capable if desired of being interengaged as planking onto a surface with like extrusions, said extrusion comprising:
 - a front wall segment;
 - 5 a first rear wall segment separate from said front wall segment and extending, at least in part, beyond a first longitudinal edge of said front wall segment;
 - a first intermediate segment connected to said front wall segment and further connected to said first rear wall segment;
 - a second rear wall segment separate from said front wall segment (not necessarily in the same plane as said first rear wall segment);
 - 10 a second intermediate segment connected to said front wall segment and further connected to said second rear wall segment said connection between said second intermediate section and said front wall segment being offset from a second longitudinal edge of said front wall segment;
 - 15 the extrusion being arranged and constructed so that said first rear wall segment of the extrusion, said first intermediate segment of the same extrusion and said second rear wall segment of an adjacent-like extrusion, said second intermediate segment of said adjacent-like extrusion and that portion of said front wall segment of said adjacent-like extrusion extending from said second longitudinal edge to its connection with its second intermediate segment of an adjacent extrusion defining a channel having a channel mouth constricted in part by said second longitudinal edge of said front wall segment of said adjacent-like extrusion segment.
 - 20 25 2. An extrusion as claimed in claim 1 wherein the plane of said intermediate segments is substantially perpendicular to the principal planes of the front wall segments and rear wall segments.
 3. An extrusion as claimed in claim 1 or 2 wherein engagement means are provided at or adjacent a longitudinal edge of said first rear wall segment distal from said intermediate segment; said means constructed to engage a part of said second rear wall segment on an adjacent-like extrusion.

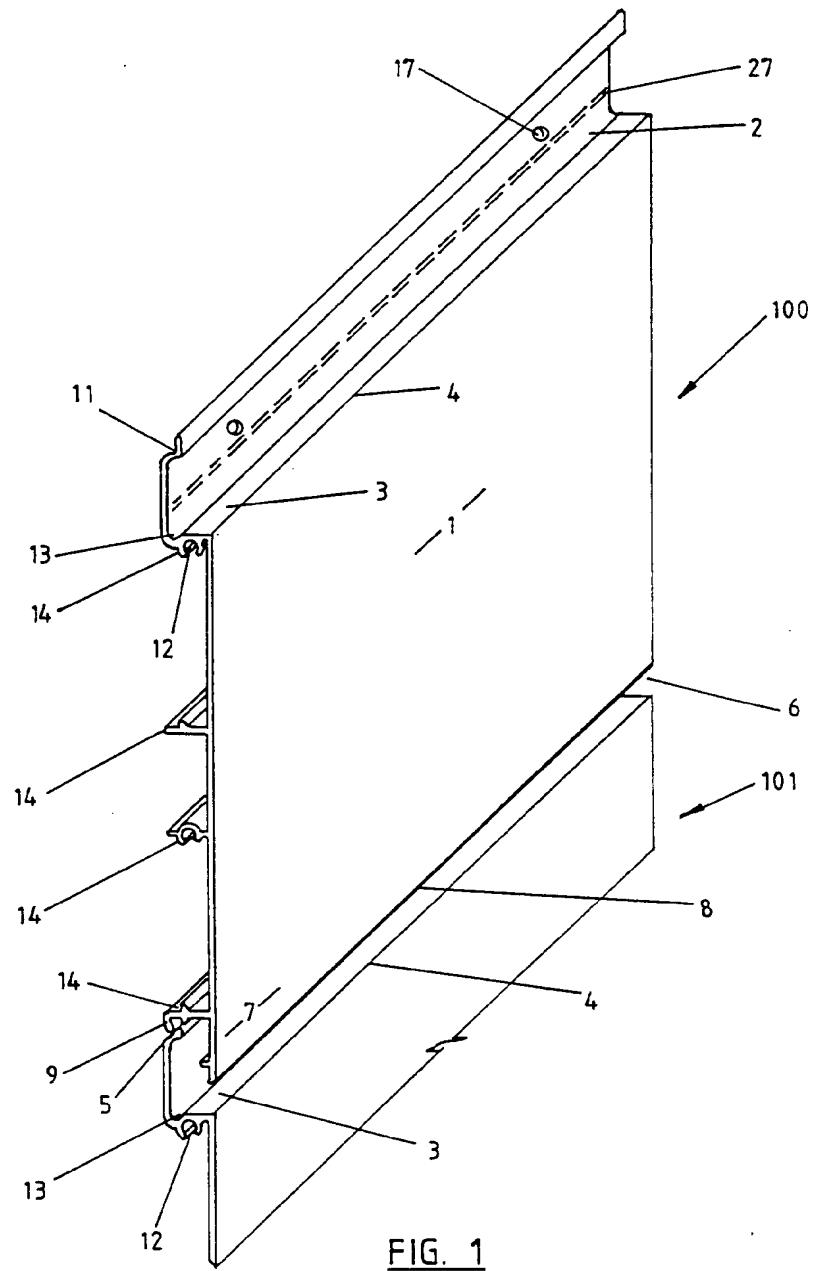
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4. An extrusion as claimed in any one of claims 1 to 3 wherein said rear wall includes attachment means for attachment of rear wall to a supporting wall.
5. An extrusion as claimed in any one of claims 1 to 4 wherein said intermediate segment and rear facing webs may include a screw tube along the length of said 5 extrusion to assist in the engagement of said extrusions with adjacent extrusions and/or for the attachment of end caps or posts.
6. An extrusion as claimed in any one of claims 1 to 5 wherein said concealed ribbing within said defined channel is used to support wiring.
7. An extrusion as claimed in any one of claims 1 to 6 wherein a concealed groove 10 at the rear of said intermediate segment within the defined channel retain coloured inserts and/or signs or other attachments.
8. An extrusion as claimed in any one of claims 1 to 7 wherein rear facing ribs on said intermediate segments and channel defining segments have webs to retain fillets to butt extrusions together to ensure flush joins and/or to support said extrusion.
- 15 9. As a combination:
 - an extrusion as hereinbefore described; and
 - a bracket comprising:
 - a load bearing portion; and
 - an engagement portion, in use said engagement portion bearing against said 20 portion of said front wall segment between said longitudinal edge and said first intermediate segment.
10. A combination as claimed in claim 9 wherein said load bearing portion is a shelf support.
11. A combination as claimed in claim 9 wherein said load bearing portion is a shelf.
- 25 12. A partition wall formed from two or more extrusions as claimed in any one of claims 1 to 8.
13. As a combination:
 - a partition wall as claimed in claim 12; and
 - an end cap member, in use, said end cap member being associated with the end 30 of said partition wall.

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14. As a combination:
 - a partition wall as hereinbefore described; and
 - a bracket comprising:
 - a load bearing portion; and
- 5 an engagement portion, in use, said engagement portion bearing against an inner, with respect to said defined channel, portion of said rear wall segment.
15. A combination as claimed in claim 14 wherein said load bearing portion is a shelf support.
16. A combination as claimed in claim 15 wherein said load bearing portion is a
10 shelf.

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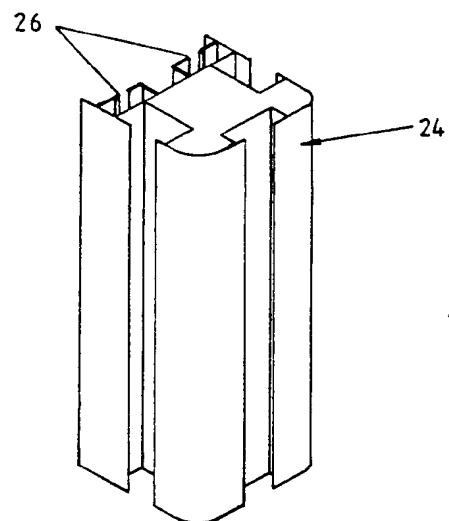


FIG. 2

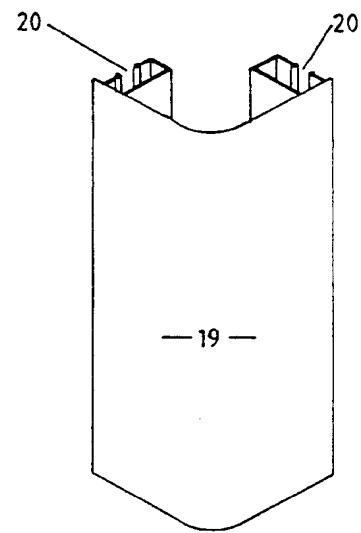
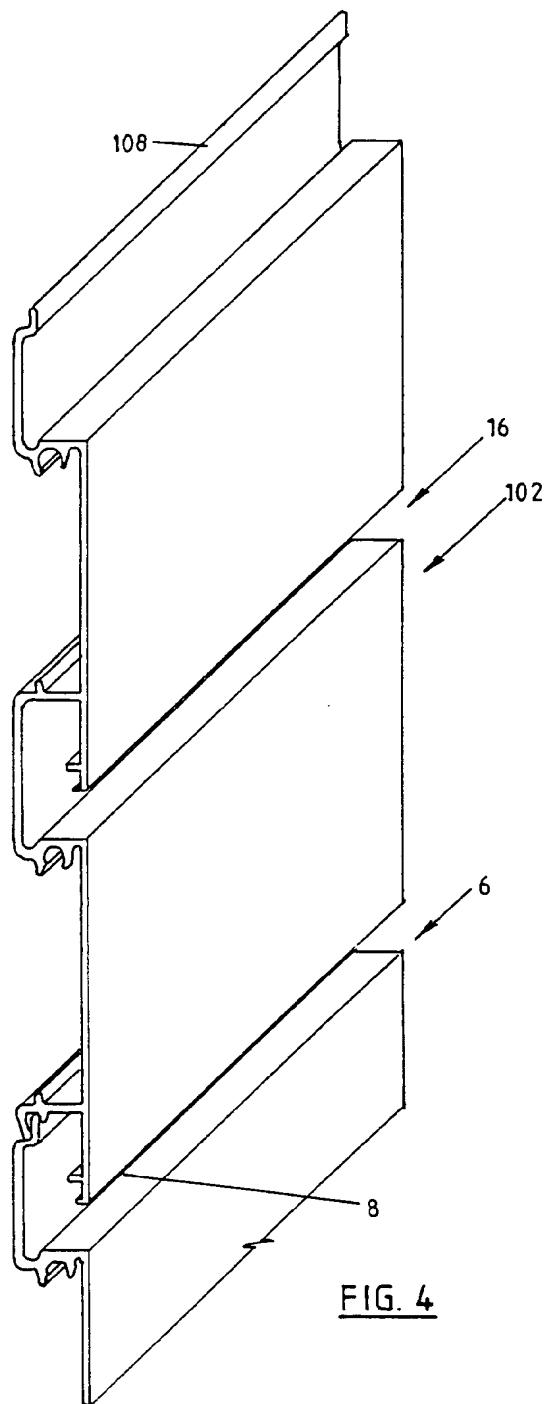


FIG. 3

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FIG. 4

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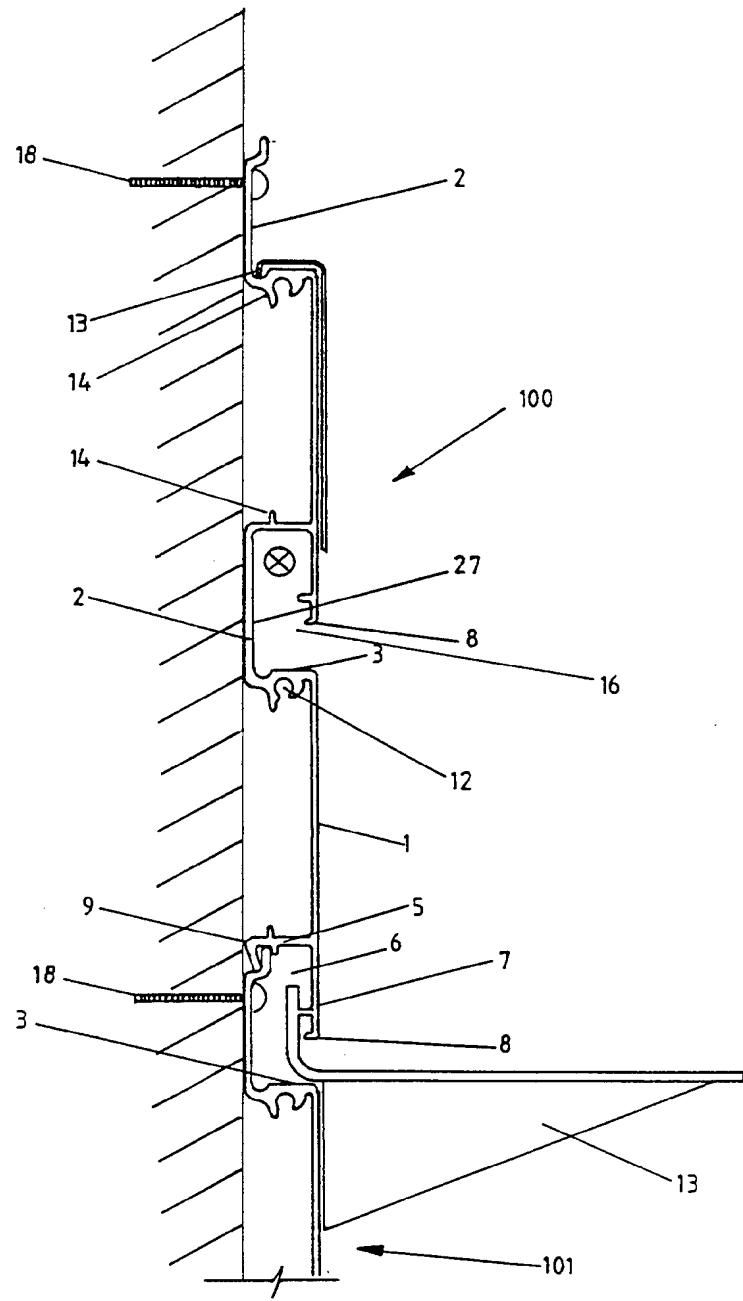


FIG. 5

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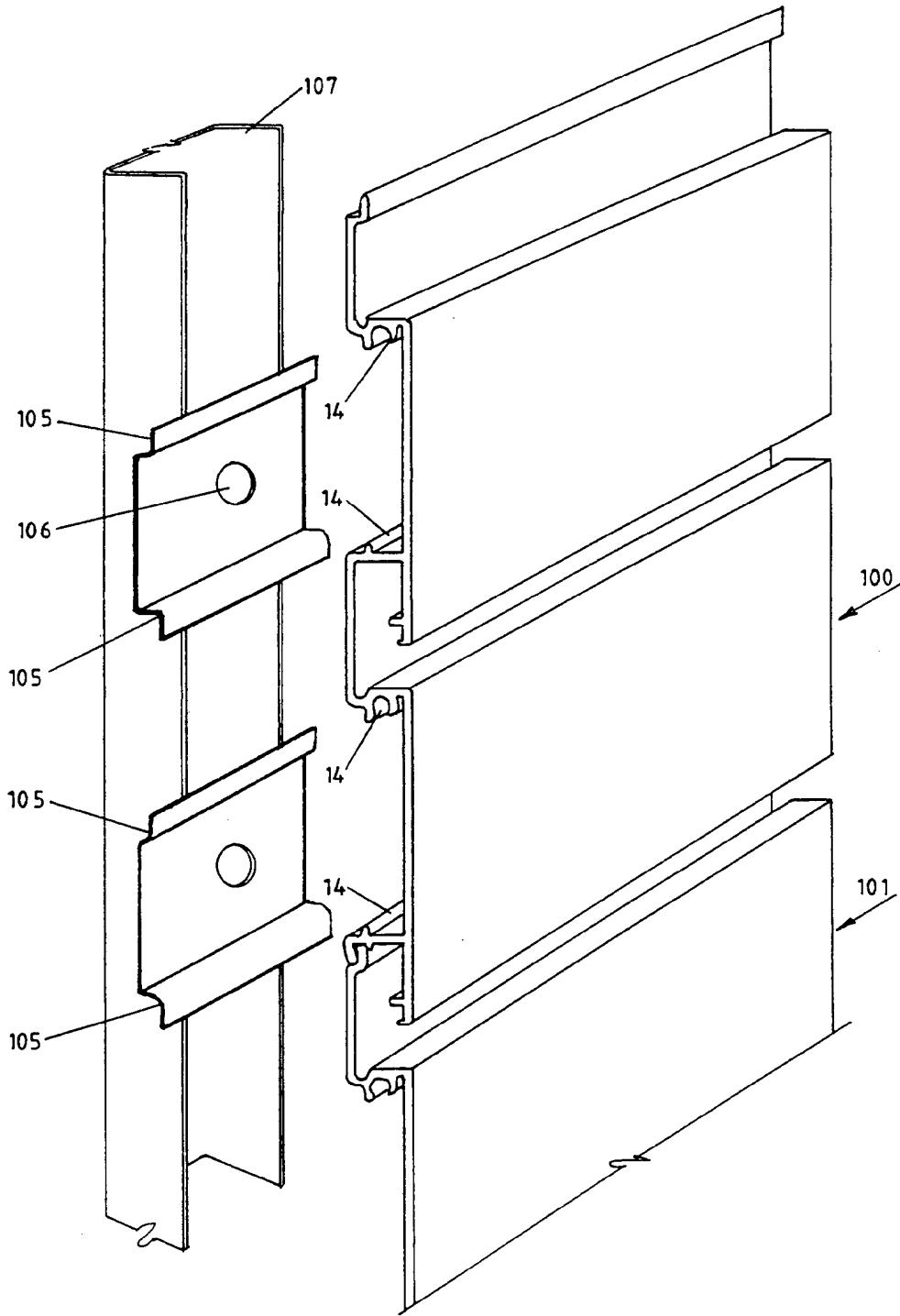


FIG. 6

INTERNATIONAL SEARCH REPORT

International application No.

PCT/NZ 95/00045

A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl.⁶ E04F 13/08, E04B 2/72, E04C 1/39, A47F 5/08

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
E04B 2/1C E04C 1/C E04F 13/1C A47B 57/1C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
AU:IPC E04B 2/72 2/74 2/76 2/78 2/90 E04C 1/39 E04F 13/12 13/18 A47B 57/10 57/34

Electronic data base consulted during the international search (name of data base, and where practicable, search terms used)
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C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to Claim No.
X	EP 397516 A (EVENT MANAGEMENT LIMITED) 14 November 1990 Figures 1 to 3, column 3 line 1 to column 4 line 54	1-16
X	GB 2245618 A (EUROCLAD) 8 January 1992 Figures 1 to 4	1-4, 12
X	AU 27205/92 (657006) B (REICHERT) 29 April 1993 page 1 line 5 to page 3 line 27, page 4 line 5 to page 5 line 21, figure 1	1-16
X	WO 94/10404 A (CLAUSEN et. al.) 11 May 1994 Figures 1 to 3, page 2 line 9 to page 3 line 2, page 3 line 24 to page 5 line 27.	1-16

Further documents are listed
in the continuation of Box C.

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Date of the actual completion of the international search
21 July 1995

Date of mailing of the international search report

16 AUGUST 1995

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate of the relevant passages	Relevant to Claim No.
A	US 3395508 A (BLAU et al)	1-8
A	FR 2419377 A (SOCIETE DES FORGES D'HAIRONVILLE) 5 October 1979	1-8
A	GB 1567161 A (LINDNER) 14 May 1980	1-8
A	WO 94/02050 A (CROOYMANS) 3 February 1994	9-16

INTERNATIONAL SEARCH REPORT

Information on patent family membe:

International application No.

PCT/NZ 95/00045

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Patent Document Cited in Search Report				Patent Family Member			
EP	397516	AU	54017/90	AU	633087	CA	2016482
		JP	3043557	US	5018323		
GB	2245618	AU	81951/91	WO	9201129		
AU	27205/92	AU	657006				
WO	94/10404	AU	51210/93	FR	2697274		
US	3395508						
FR	2419377	DE	2827837	NL	7806920		
GB	1567161						
WO	94/02050	EP	650338	NZ	248219		
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